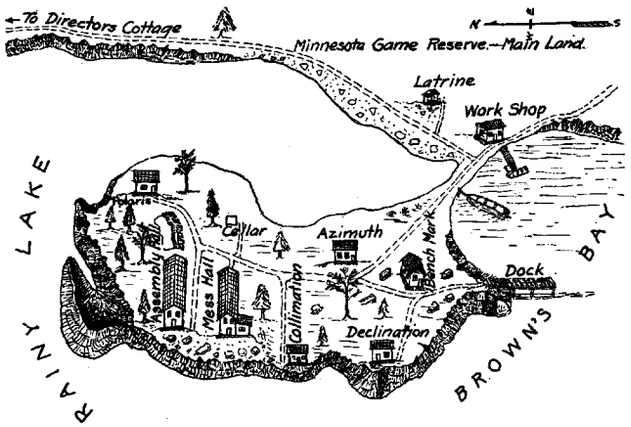
THE RAINY LAKE CONFERENCE

By PROF. R. C. SLOANE



CAMP MARSTON

WHEN the program for the 45th annual meeting of the Society for the Promotion of Engineering Education (held in July, 1937, at Cambridge, Mass.) was arranged, it was decided to have a seminar of engineering teachers, primarily interested in surveying, meet at one of the summer camps maintained by the member schools. The purpose of the conference to be the improvement of surveying instruction.

Prof. J. S. Dodds of Iowa State College offered the full facilities of Camp Marston on Rainy Lake, Minn. This offer was promptly accepted. From the standpoint of isolation the camp was ideally located. Situated in sparsely settled country, on the south shore of Rainy Lake, 35 miles from Rainer, Minn., the camp had absolutely no highway connection and was serviced twice weekly by a small gasoline launch.

Thus, from July 25th to August 6th the delegates worked, ate, and played together as one large family entirely free from outside distractions. The writer, arriving two days late, missed all the excitement and fun usually attending the formation of a crowd of people, mostly unacquainted and unused to camping conditions, into a well organized and satisfied group. However, Prof. Dodds proved to be a genial host and a past-master at such organization. The success of the conference was largely due to his untiring efforts.

During the 5 hour boat ride from Rainer to Camp we alternately passed over broad, smooth expanses of water and narrow channels between the numerous islands, (see map of Rainy Lake) finally arriving at Camp Marston. The camp is located on a long, narrow peninsula connected to the Minnesota mainland by a very narrow neck of land. The peninsula is rocky and rugged with a maximum elevation above lake level of about 30 feet. The total area is approximately 2 acres. Shown also is a rough pen sketch of the arrangement of cottages and other buildings.

The arrival of the boat was quite an occasion. All normal activities of camp ceased until new arrivals were greeted, good bye's said to departing guests, and the mail distributed and read.

Since we arrived late in the afternoon the scheduled meetings for the day were over and we were not introduced to the serious purpose of the conference until the following morning. The regular camp routine was as follows: At 6:00 to 6:30 A. M. arise, wash, clean your teeth and shave with the cool, clear lake as your only wash basin. I might also add that those blessed with sufficient intestinal fortitude took an early morning plunge in the lake. The writer tried this just once, and once was enough.

At 7:00 A. M. Breakfast.
8:30 to 11:30 A. M. Reading and discussion of papers.
12 o'clock noon—Dinner.
1:30 to 3:30 P. M. Committee reports and general discussion.
4:00 to 6:00 P. M. Recreation.
6:00 Supper.

For recreation three motor boats supplied transportation to nearby rivers and islands. Swimming, horse shoe pitching and ping-pong had to answer for those not enthusiastic about boating. Oh! Yes, what about fishing? From several of my friends, Sherman, Knight, Haskett, St. John and others who are authorities on the great north woods, I had gained the idea that it was extremely dangerous to walk along the shores of our northern lakes unless you were well prepared to repel an attack of great northern pike. Well, I have a confession to make. The only fish with which I became intimately acquainted was the whitefish served on the camp table. Professor Rayner of Illinois owned the only fishing tackle in camp and I understand his net results were two wall eyed pike. I guess they were there alright, but you had to employ a guide to perform the introduction.

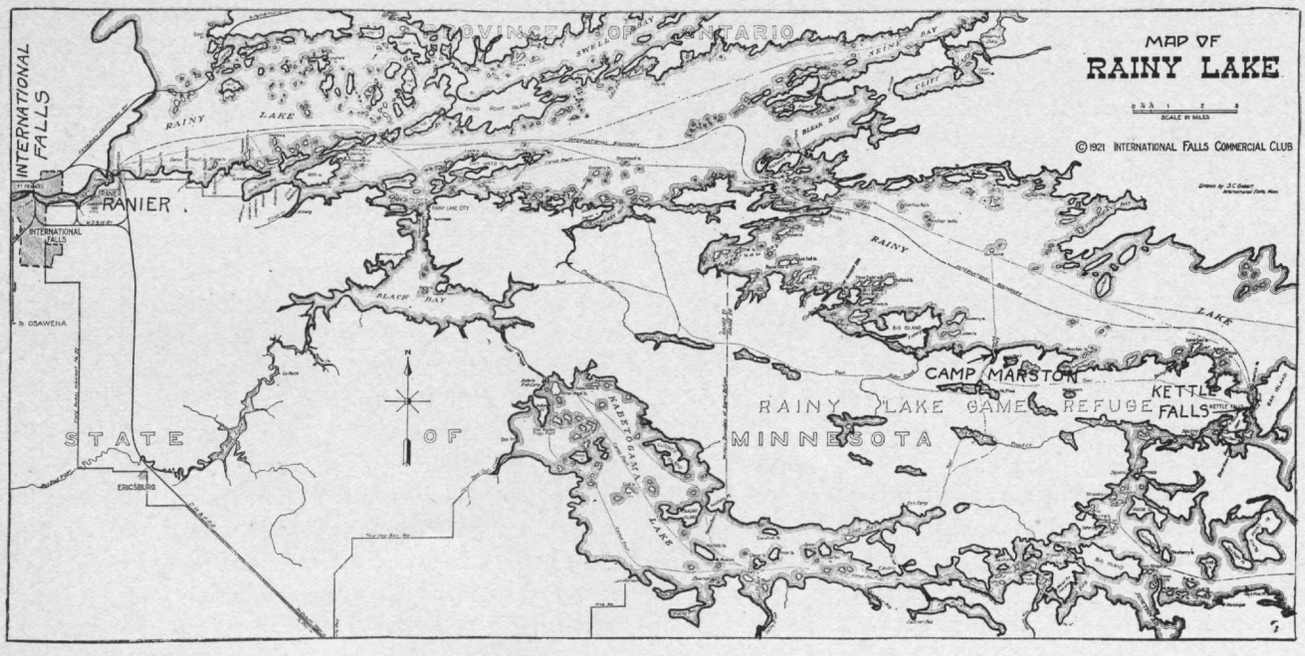
At 8:00 P. M. camp fire discussions were held on alternate evenings. Otherwise, groups having similar interests would congregate in one of the five cottages for long and intimate bull sessions. To the writer these sessions were the most valuable part of the conference. Here, in the soft light from a kerosene lamp or the flickering blaze of a wood fire the stiff pedagogic manner of the class room vanished and under the mellowing influence of a good pipe or cigar we became as frank and open in our discussion as a bunch of college students criticizing their professors.

While each one modestly defended his teaching methods and took due credit for what he considered his successes, he also freely admitted his difficulties and failures and sought the help and advice of anyone who had had similar experiences. Personally I received many helpful suggestions and expect to revise my teaching methods accordingly. Rather than burden the reader with a long report on the various papers, or a resumé of the entire program, the reader is allowed to imagine the spirited discussion which is bound to take place when representatives of some 30 engineering schools, widely separated geographically, get together.

As an example of the effect of geography on engineering teaching take the subject of compass surveys. Representatives of eastern schools felt the use of the compass to be obsolete and that the time now devoted to teaching compass surveys could be spent more profitably in expanding modern methods. Midwestern schools were rather luke warm on the subject but felt some instruction was necessary in order that the student might be able to interpret old deeds and retrace compass surveys. Western schools strongly defended it as the only economic method applicable to the survey of lands costing 50c to $1.00 per acre, rapid surveys of timber lands where extreme accuracy was not desired, and where transit surveys would entail much unjustified expense in cutting lines of sight.

The amount and content of a surveying course for non-civils, and the desirability of including aerial surveying in the regular curriculum were other debatable subjects.

These and other similar subjects were referred to committee, duly studied, and reported back to conference. After debate and amendment minimum course content in Aerial Topography, Advanced Surveying, and Non-Civil Surveying were adopted for recommendation to the Society for Promotion of Engineering Education and will likely appear in the next annual report of this society. The discussion on aerial surveying was very illuminating due to the presence of Earl Church of Syracuse and H. O. Sharp of R. P. I., both men having written recent text books



on the subject. It was the sense of the conference that a 3-hour course in Photogrammetry was desirable in all civil engineering curricula for the following reasons:

1. Many extensive surveys both for topography and relief are made by aerial methods.
2. Many surveys are made by a combination of aerial and ground methods, i. e. extensive controls are run by ground methods, and details supplied from aerial photographs.
3. Before the surveyor can use aerial photographs for detail he must understand the various problems of scale, tilt, overlap, etc.
4. The use of aerial surveys is rapidly expanding in all government departments.
5. Machines for picturing relief by contours are constantly being improved and coming into common use.

An interesting feature of the discussion was a mathematical explanation of the Multiplex and Stereocomparator by Prof. Church. Both of these machines are relatively easy to operate after someone has figured and set the space co-ordinates.

Another subject showing much variation in the method of teaching was summer surveying camps. Schools having limited campus facilities do not teach field exercises during the regular school year, but concentrate them into a summer field trip varying from 2 to 6 weeks. Thus each student of surveying, in order to receive instruction in the use and care of instruments, must attend surveying camp. A complete log of the work done at such camps is very similar in number and type of problems to a yearly field schedule of work done on our own campus during the sophomore year. After interviewing instructors from nine representative schools and comparing notes as to course content, it was very evident that camp exercises were predicated upon the amount and type of field exercises the student had received during the school year.

Thus a school giving no field exercises on the campus would use camp exercises short and elementary. Schools giving more campus exercises would assign longer and more difficult problems, but always based upon the type of preliminary training received on the campus. The Ohio State University stood somewhat alone in this respect. At the Ohio State University, surveying camp is preceded by a full year of surveying instruction and we assume the student has received enough campus field instruction to undertake a large commercial job from its inception to completion.

On one subject, however, there was a complete and unanimous agreement among all instructors who had taught in summer camp. Viz, "That there exists a certain indefinable benefit to the student attending camp over and above the instrumental knowledge gained." Several attempts were made during the discussion to define the above benefit yet all of us felt the definition to be incomplete and inadequate. Here are some of the attempts:

1. The student gains self-confidence and develops an initiative very noticeable in his subsequent college work.
2. By the close contacts and intimate relationships of camp life the student learns to evaluate the ability and worth of his fellow students and instructors. Thus he is supplied with a mental yardstick with which to measure his own successes or failures.
3. It is the student's first introduction to cooperative engineering effort, and he has a chance to study the human side of his fellow students and instructors. Thus, for the first time he feels himself an integral and necessary part of the college in which he is enrolled.
4. And the shortest and most comprehensive definition of all was "The student has found himself."

Many other subjects of interest were discussed which cannot be presented here, but those interested can secure a complete report of the conference by writing Prof. J. S. Dodds, Iowa State University, Ames, Iowa.

The questions will naturally arise "Was the conference a success? Was the time and expense of the trip fully compensated by the benefits received? What were the tangible benefits to yourself? etc." To the first two questions, decidedly "Yes." The reasons for such an answer will appear in a discussion of question number three.

The first and probably the most important benefit was the gaining of a definite knowledge of how men in colleges similar to your own were teaching your particular subjects. Thus you were furnished with a definite measuring device for evaluating your own work. You came away with a new respect for yourself and your position, however humble it may be.

Second, the very isolation of the camp was conducive to long, intimate discussions with men who were leaders in your own field. You felt that these conversations had an honesty and sincerity impossible to glean from papers prepared for public consumption.

Third, you became well acquainted and on a friendly footing with many active men in your profession, whom previously you had known as names in a college catalogue.

And last, but not least, you met men so bubbling over with enthusiasm for their work that some of it was bound to be catching. You came away feeling that you had been freed from the sameness and drudgery of your work, and that there were new vistas and new fields even in the hum-drum existence of a college professor. Yes, the conference was very much worth while and should become an annual affair.